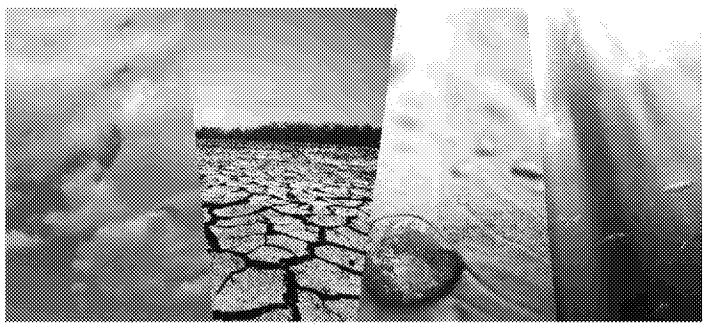
Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 14-03-1365

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: CH2M Hill

Client Project Name: Dynegy SBPP / 482070.01.06

Attention: James Laws
6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707-5735

Approved for release on 03/26/2014 by:
Virendra Patel
Project Manager

ResultLink ▸

Email your PM ▸

nelac

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: Dynegy SBPP / 482070.01.06
Work Order Number: 14-03-1365

Calscience Environmental Laboratories, Inc.

Work Order Narrative

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 03/19/14. They were assigned to Work Order 14-03-1365.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Calscience Environmental Laboratories, Inc.

Sample Summary

Client:	CH2M Hill	Work Order:	14-03-1365
	6 Hutton Centre Drive, Suite 700	Project Name:	Dynegy SBPP / 482070.01.06
	Santa Ana, CA 92707-5735	PO Number:	482070-1000
		Date/Time Received:	03/19/14 17:15
		Number of Containers:	6
Attn:	James Laws		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SBPP-PCB8-031914	14-03-1365-1	03/19/14 08:42	1	Wipe
SBPP-PCB7-031914	14-03-1365-2	03/19/14 08:46	1	Wipe
SBPP-PCB3-031914	14-03-1365-3	03/19/14 08:52	1	Wipe
SBPP-PCB2-031914	14-03-1365-4	03/19/14 08:58	1	Wipe
SBPP-PCB1-031914	14-03-1365-5	03/19/14 09:03	1	Wipe
SBPP-PCB10-031914	14-03-1365-6	03/19/14 09:11	1	Wipe

Calscience Environmental Laboratories, Inc.

Analytical Report

CH2M Hill
6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707-5735

Date Received: 03/19/14
Work Order: 14-03-1365
Preparation: EPA 3545
Method: EPA 8082
Units: ug/smpl

Project: Dynegy SBPP / 482070.01.06

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB8-031914	**14-03-1365-1-A**	**03/19/14 08:42**	**Wipe**	**GC 31**	**03/21/14**	**03/25/14 19:13**	**140321L14**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	1.0	1.00	
Aroclor-1221	ND	1.0	1.00	
Aroclor-1232	ND	1.0	1.00	
Aroclor-1242	ND	1.0	1.00	
Aroclor-1248	ND	1.0	1.00	
Aroclor-1254	ND	1.0	1.00	
Aroclor-1260	ND	1.0	1.00	
Aroclor-1262	ND	1.0	1.00	
Aroclor-1268	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	104	50-130	
2,4,5,6-Tetrachloro-m-Xylene	105	50-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB7-031914	**14-03-1365-2-A**	**03/19/14 08:46**	**Wipe**	**GC 31**	**03/21/14**	**03/25/14 19:32**	**140321L14**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	1.0	1.00	
Aroclor-1221	ND	1.0	1.00	
Aroclor-1232	ND	1.0	1.00	
Aroclor-1242	ND	1.0	1.00	
Aroclor-1248	ND	1.0	1.00	
Aroclor-1254	ND	1.0	1.00	
Aroclor-1260	ND	1.0	1.00	
Aroclor-1262	ND	1.0	1.00	
Aroclor-1268	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	105	50-130	
2,4,5,6-Tetrachloro-m-Xylene	108	50-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

CH2M Hill
6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707-5735

Date Received: 03/19/14
Work Order: 14-03-1365
Preparation: EPA 3545
Method: EPA 8082
Units: ug/smpl

Project: Dynegy SBPP / 482070.01.06

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB3-031914	**14-03-1365-3-A**	**03/19/14 08:52**	**Wipe**	**GC 31**	**03/21/14**	**03/25/14 19:51**	**140321L14**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	1.0	1.00	
Aroclor-1221	ND	1.0	1.00	
Aroclor-1232	ND	1.0	1.00	
Aroclor-1242	ND	1.0	1.00	
Aroclor-1248	ND	1.0	1.00	
Aroclor-1254	ND	1.0	1.00	
Aroclor-1260	ND	1.0	1.00	
Aroclor-1262	ND	1.0	1.00	
Aroclor-1268	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	94	50-130	
2,4,5,6-Tetrachloro-m-Xylene	98	50-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB2-031914	**14-03-1365-4-A**	**03/19/14 08:58**	**Wipe**	**GC 31**	**03/21/14**	**03/25/14 20:10**	**140321L14**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	1.0	1.00	
Aroclor-1221	ND	1.0	1.00	
Aroclor-1232	ND	1.0	1.00	
Aroclor-1242	ND	1.0	1.00	
Aroclor-1248	ND	1.0	1.00	
Aroclor-1254	ND	1.0	1.00	
Aroclor-1260	ND	1.0	1.00	
Aroclor-1262	ND	1.0	1.00	
Aroclor-1268	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	109	50-130	
2,4,5,6-Tetrachloro-m-Xylene	111	50-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

CH2M Hill
6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707-5735

Date Received: 03/19/14
Work Order: 14-03-1365
Preparation: EPA 3545
Method: EPA 8082
Units: ug/smpl

Project: Dynegy SBPP / 482070.01.06

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB1-031914	**14-03-1365-5-A**	**03/19/14 09:03**	**Wipe**	**GC 31**	**03/21/14**	**03/25/14 20:29**	**140321L14**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	1.0	1.00	
Aroclor-1221	ND	1.0	1.00	
Aroclor-1232	ND	1.0	1.00	
Aroclor-1242	ND	1.0	1.00	
Aroclor-1248	ND	1.0	1.00	
Aroclor-1254	ND	1.0	1.00	
Aroclor-1260	ND	1.0	1.00	
Aroclor-1262	ND	1.0	1.00	
Aroclor-1268	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	95	50-130	
2,4,5,6-Tetrachloro-m-Xylene	99	50-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB10-031914	**14-03-1365-6-A**	**03/19/14 09:11**	**Wipe**	**GC 31**	**03/21/14**	**03/25/14 20:49**	**140321L14**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	1.0	1.00	
Aroclor-1221	ND	1.0	1.00	
Aroclor-1232	ND	1.0	1.00	
Aroclor-1242	ND	1.0	1.00	
Aroclor-1248	ND	1.0	1.00	
Aroclor-1254	ND	1.0	1.00	
Aroclor-1260	ND	1.0	1.00	
Aroclor-1262	ND	1.0	1.00	
Aroclor-1268	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	108	50-130	
2,4,5,6-Tetrachloro-m-Xylene	108	50-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

CH2M Hill
6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707-5735

Date Received: 03/19/14
Work Order: 14-03-1365
Preparation: EPA 3545
Method: EPA 8082
Units: ug/smpl

Project: Dynegy SBPP / 482070.01.06

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-582-271**	**N/A**	**Solid**	**GC 31**	**03/21/14**	**03/25/14 18:54**	**140321L14**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	1.0	1.00	
Aroclor-1221	ND	1.0	1.00	
Aroclor-1232	ND	1.0	1.00	
Aroclor-1242	ND	1.0	1.00	
Aroclor-1248	ND	1.0	1.00	
Aroclor-1254	ND	1.0	1.00	
Aroclor-1260	ND	1.0	1.00	
Aroclor-1262	ND	1.0	1.00	
Aroclor-1268	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	91	50-130	
2,4,5,6-Tetrachloro-m-Xylene	92	50-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

CH2M Hill
6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707-5735

Date Received: 03/19/14
Work Order: 14-03-1365
Preparation: EPA 3545
Method: EPA 8082

Project: Dynegy SBPP / 482070.01.06

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-582-271	**LCS**	**Solid**	**GC 31**	**03/21/14**	**03/25/14 18:16**	**140321L14**
099-12-582-271	**LCSD**	**Solid**	**GC 31**	**03/21/14**	**03/25/14 18:35**	**140321L14**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aroclor-1016	2.000	2.026	101	1.896	95	50-135	7	0-25	
Aroclor-1260	2.000	1.868	93	1.833	92	50-135	2	0-25	

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Sample Analysis Summary Report

Work Order: 14-03-1365 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8082	EPA 3545	669	GC 31	1

Return to Contents

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order: 14-03-1365 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

COC #4

Calscience Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

WO # / LAB USE ONLY: 14-03-1365

Date 3/19/14

Page 1 of 1

LABORATORY CLIENT: CH2MHill

ADDRESS: 6 Hutton Centre Dr #700

CITY: Santa Ana STATE: CA ZIP: 92707

TEL: (714)

E-MAIL: GEarly@CH2M.Com

CLIENT PROJECT NAME / NUMBER: Dynegy SBPP / 482070.01.06

P.O. NO.: 482070 - 1000

PROJECT CONTACT: James Laws

SAMPLER(S): (PRINT) Grey Early

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF

GLOBAL ID:

LOG CODE:

SPECIAL INSTRUCTIONS:
E-Mail Results to
James.Laws@CH2M.Com
GEarly@CH2M.Com

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]
1	SBPP-PCB 8-031914	3/19/14	8:42	Wipe	1	X												X			
2	SBPP-PCB 7-031914		8:46		1	X												X			
3	SBPP-PCB 3-031914		8:52		1	X												X			
4	SBPP-PCB 2-031914		8:58		1	X												X			
5	SBPP-PCB 1-031914		9:03		1	X												X			
6	SBPP-PCB 10-031914		9:11		1	X												X			

Relinquished by: (Signature) CH2MHill	Received by: (Signature/Affiliation)	Date: 03/19/14	Time: 1440
3/19/14 ~~12:00~~ 1440			
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/19/14	Time: 1715
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

09/01/13 Revision

Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 14-03-[1][3][6][5]

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CH2MHILL DATE: 03/19/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.3 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Checked by: 671

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Checked by: 671

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Checked by: 846

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☑4ozCGJ (wipe) ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Aqueous: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBp ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGJ ☐500AGJs ☐250AGB ☐250CGB ☐250CGBs ☐1PB ☐1PBna ☐500PB ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ Labeled/Checked by: 846

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: SR

Preservative: h: HCL n: HNO_3 na_2:$Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered Scanned by: SR